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Preliminary Report on Interrogation of
Wachtmeister Dr. Otto BUGGISCH (of OKH/Gen. d. NA)
and Dr. Werner LIEBKNECHT (employed by OKH and OKW
as tester of cryptographic equipment). 23 June 1945

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TOP SECRET "U"

23 June, 1945

SUBJECT: Preliminary Interrogation Report: Otto Buggisch and Werner Liebknecht.

TO: Signal Intelligence Officers:
European Theater of Operations, United States Army, APO 887
Twelfth Army Group, APO 655, US Army
Seventh US Army, APO 758, US Army.

1. a. Otto Buggisch, Ph D, Mathematics Wachtmeister - Interrogated subject on 21 June 1945 at the Army IC. He received Ph D from University of Darmstadt and taught in various schools in the Darmstadt area. He came into the Army in May 1939 in the Air Corps. In 1940 he was transferred to the Nachrichten Truppen and worked with Army Group "C" during the campaign in France. He had no original training for cryptanalysis and was purely mathematically inclined. Prior to the conclusion of the French Campaign the French Cipher Machine 36 was captured and he and three (3) other mathematicians made studies thereon and believed they had successfully found a way to compromise traffic passed by this machine. In fact, in 1942 and 1943 he claims to have had actual success with this machine when it was again employed by the Free French. In the latter part of July 1940 he was transferred to the OKH and was there mainly concerned with the theoretical mathematical analysis of cipher traffic. He worked on Russian traffic which was all figures enciphered code traffic. His job and the other mathematically-minded personnel with him was to remove the additives employed and to thereby lay bare the code for the codebreakers. He claims to have been very successful with traffic passed by the political representatives in the Army. He continued to work with the OKH and in the winter of 1942 was transferred and instead of working with cipher problems worked on security of German cipher traffic. He is preparing a more lengthy survey of security of German cipher machines which will be available within a few days.

b. Regarding other Allied cipher machines, he knows of extensive work done on traffic passed by the British Typex Machine but is not certain of the success achieved. He first worked in the summer of 1943 on M-209 traffic and stated that unless we made an internal error in the settings or they got messages with the exactly same external indicator the traffic for all practical purposes is unbreakable. No mention at all was made of any studies being conducted from his point of view on SIGABA traffic.

2. Werner Liebknecht. Dr. Werner Liebknecht, a German civilian, employed by the OKH and OKW as a tester of the results of newly developed cryptographic equipment, listed the various types of German telegraphic cipher machines and voice cipher machines. Following are the list of machines used for telegraphic traffic:

a. Enigma - Traffic must first be enciphered - this cannot be employed directly with teletype equipment - machine operates too slowly - new machine was in development at Frankfurt-on-Main. The Enigma is the most widely used and very secure.

b. Schluessel Geraet 39 - This was designed for use with the teletype: however, the shortage of certain equipment prevented the production of this machine.

c. Schluessel Zusatz 40 & 42 - This cipher machine is employed directly with teletype equipment. It is a separate piece of equipment which can be attached to any teletype machine. The 42 employs 12 rotors while the 40 employs 10.

d. Schluessel Fernschreiber Machine 52 Types A to F - This machine developed by the Navy and is a combined teletype and cipher machine. It is similar to the 42; however, it is one-unit. Has a total of ten (10) discs.

e. Kriegs Schreiber - This machine was in development near Chemnitz - is smaller than the Enigma and was planned to be more easily usable for the field.

f. Schluessel Schreiber - This machine was in development - is very small - and employs a fixed key - only two machines of this type being made and was designed for use by agents; however, these machines were never completed.

Voice Cipher Machines: According to Dr. Liebknecht no satisfactory secure German voice scramblers or other voice cipher devices from a security standpoint for use have been developed. Many were in the development stage; however, none were employed successfully. Some types of machines tested or planned were as follows:

a. Time Scramblers: Invented by Tigerstedt, a Swedish Inventor. The time unit employed was 1/200,000 to 1/60,000 of a second.

b. Carrier Variation: 1 to 3 fold carrier variations were attempted; however, the equipment problems, according to Liebknecht, were very extensive. The 3 fold he has hopes for and expects to be able to finish its development with enough time and cooperation. He believes this to be extremely secure.

c. Superimposing noise of electrons on speech and taking it out by 180 degree phase; A fixed noise level was not at all successful, but a variable number when employed had some small degree of success. This plan was actually employed back in the North African Campaign when communication from Athens, Greece to Derna, North Africa via Crete was maintained. A noise level of 1 to 4 was employed; however, the problems involved outweigh the advantages derived and the equipment was destroyed by fire and never replaced.

d. Inventor of Voice Frequency: With this system 20 to 40 percent of the text is readable anyway. He believes that "amplifying the phase reversal will improve the security." The equipment used in this system is quite small.

3. These individuals have been passed on to ETOUSA for more intensive technical interrogation.

CHARLES W. FLINT
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